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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,642	12/27/2001	Koichi Tsunoda	217832US2	7761
22850	7590	08/24/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MICHALSKI, JUSTIN I	
			ART UNIT	PAPER NUMBER
			2644	
DATE MAILED: 08/24/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/026,642

Applicant(s)

TSUNODA ET AL.

Examiner

Justin Michalski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-19 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghitza et al. (Hereinafter "Ghitza")(US Patent 6,609,092).

Ghitza discloses a method of evaluating sound quality on an apparatus, comprising the steps of: collecting a sound caused from image forming apparatus at a location apart a certain distance from said apparatus (Fig. 1, source 110); measuring a psychoacoustic parameter of the collected sound (objective measurement 116); deriving a subjective evaluation value from the collected sound through a subjective evaluation (subjective test 112); subjecting said measured psychoacoustic parameter and the subjective value to a multiple regression analysis (regression analysis 118); computing a sound quality evaluative equation for assuming a subjective evaluation value (Col. 3, lines 1-6), based on a result from the multiple regression analysis, using said psychoacoustic parameter; and computing a proper range of the subjective evaluation value assumed by the sound quality evaluative equation in said apparatus (output of 128). Ghitza does not disclose the apparatus being an image forming apparatus. However, Ghitza discloses that the invention provides a method for estimating subjective measures of audio signal quality using objective measures and may be an

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type of audio signal (Col. 1, lines 54-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method as taught by Ghitza with an image forming apparatus to provide method for estimating subjective measures of audio signal quality using objective measures of an audio signal.

***Allowable Subject Matter***

2. Claims 2-19 allowed.
3. The prior art of record does not teach or suggest an image forming apparatus characterized by a discomfort index,  $S$ , which satisfies  $S < -0.5$ , wherein the discomfort index  $S$  is calculated with following sound quality evaluative equation (a), using a loudness value and a tonality value, both psychoacoustic parameters obtained from the sound from said image forming apparatus at a location apart a certain distance from an end of said image forming apparatus or an image forming apparatus characterized by a discomfort index,  $S$ , which satisfies  $S < -0.448$ , wherein the discomfort index  $S$  is calculated with the following sound quality evaluative equation (e), using a sound pressure level (A characteristic) and, a sharpness value or a psychoacoustic parameter obtained from the sound from said image forming apparatus at a location apart a certain distance from an end said image forming apparatus.

**Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Uvacek et al. (US Patent 6,327,366) discloses regression analysis of audio signal (Fig. 1 and 3)

Sasaharat et al. (US Patent 5,930,577) and Takahashi et al. (5,867,748) disclose sound processing from an image forming apparatus..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (571)272-7524. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM  
  
August 9, 2005

  
**VIVIAN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**